

## Article Index

### Volume 10, January through December 1967

This index lists all feature articles and items of one-half page, or more, in length published during 1967. Article subjects are classified by functional category: Management, Fastening and Joining, Electrical/Electronic Assembly & Packaging and Assembly Systems.

#### MANAGEMENT

Assembly Design and Planning by Computer; Jan, p. 12  
Tuning Up for Profits in Manufacturing; Feb, p. 16  
Incentive Management in Action; Mar, p. 20  
Beating the Cost-Price Squeeze; April, p. 14  
Effective Assembly Training; May, p. 26  
Variable Assembly Sequencing Technique; June, p. 14

Prescription for Small Lot Headaches; July, p. 14  
Wage Incentive Orientation Through Employee Booklets; Aug, p. 14  
Clean Room Justification Guidelines; Sept, p. 14  
How to Live With Your Employees—Peacefully and Profitably; Oct, p. 22  
Producibility: A Concept for Lower Assembly Costs; Nov, p. 20  
Assembly Data Management; Part I; Dec, p. 18

## ARMSTRONG Industrial Quality WRENCH SETS



You get quality bonus when you buy ARMSTRONG Wrench Sets. This "plus value" is the Industrial Quality built into every ARMSTRONG product—the "tool sense" and know-how acquired through more than seventy years of toolmaking for industry which is applied to every product we manufacture.

#### INDUSTRIAL WRENCH SETS

ARMSTRONG Wrench Sets consist of the types and size ranges of tools required for industrial work (not for garage, homecraft or hardware store appeal)—but tools essential for assembly, maintenance or service applications. ARMSTRONG offers a broad assortment of wrench sets consisting of all types of wrenches and sockets ranging in size from those used for delicate electronic work to those needed for bridge and construction jobs. There are over 60 sets, all designed to meet various industrial requirements.

#### INDUSTRIAL QUALITY COMPONENTS

ARMSTRONG sockets, drive tools and other components are held to the highest industrial standard of quality. Sockets, accurately machined to close tolerances, slip over nuts or screw heads easily, grip firmly without sloppiness, and won't round corners. The extensive assortment of ARMSTRONG sockets and drive parts provides for the instant assembly of the proper tool for each specific job. Drive tools and supplementary wrenches are balanced to feel right and lessen fatigue when used continuously on the assembly line. Wrench openings will not spread or chew out. Sockets and drivers are handsomely finished in chrome plate as are ARMALLOY (alloy steel) wrenches. HI-TEN (carbon steel) wrenches are finished in baked-on-gray enamel with beads ground bright. Power drive sockets and accessories have rust-resistant black oxide finish.

#### INDUSTRIAL QUALITY CASES

ARMSTRONG Tool Cases and Cabinets are also of Industrial Quality. Carefully constructed of heavy gage steel, fitted to simplify tool selection—they have full length piano hinges and sturdy latches; larger cases and cabinets are equipped with substantial locks and handles. Drawers pull smoothly. All are trim in line and distinctively finished in two-tone baked enamel... with lids dark gray, bases lighter gray. Most cases provide ample space not only for the assortment carried, but for additional tools which the user may have or wish to add.

*When you order wrench sets—in metal cases, boxes or roll-packs, specify ARMSTRONG and get Industrial quality, "Fine tools that encourage good work."*

Your local ARMSTRONG Industrial Distributor offers you prompt delivery from stock on wrench sets as well as other industrial quality ARMSTRONG Tools.

**ARMSTRONG BROS. TOOL CO.**

5203 W. ARMSTRONG AVE. • CHICAGO 46, ILLINOIS

Use reader information card, circle 312

#### FASTENING & JOINING

The Turn-of-the-Nut Method; Jan, p. 16  
High-Strength Internal-Wrenching Screws; Feb, p. 22  
Special Cold-Headed Parts; Mar, p. 26  
Reader Feedback: The Turn-of-the-Nut Method; April, p. 20  
The Constant-Energy Concept; May, p. 34  
Specifying and Using Shims; June, p. 20  
The Effect of Tapered Bolts on Structural Integrity; July, p. 18  
Reader Feedback: The Turn-of-the-Nut Method; Aug, p. 18  
Anchor Nuts—Their Selection and Use; Sept, p. 20  
Cross Reference Chart for Nut Plates and Drill Jigs; Oct, p. 28  
Maintaining Tightness of Threaded Fasteners; Nov, p. 24  
Analysis of Nut and Bolt Torques; Part I; Dec, p. 22

#### ELECTRICAL/ELECTRONIC ASSEMBLY & PACKAGING

Preventing Multiple-Contact Connector Problems; Jan, p. 22  
Microcircuit Packages by the Millions; Feb, p. 32  
Streamlining Electronic Assembly Methods; Mar, p. 38  
Optimum Welds for Electronic Packaging; April, p. 30  
Flexible Flat Cable and Wiring; May, p. 40  
Computer Prepared Wiring List Drawings; June, p. 26  
Continuous Certification of Welding Operators; July, p. 28  
Reducing the Cost of Electrical Assemblies; Aug, p. 26  
Ribbon Preforming Fixtures for Cordwood Modules; Sept, p. 28  
High Density Modular Electronic Packages;  
Part I; Oct, p. 34  
Part II; Nov, p. 30  
Electrical Connectors for Appliances; Dec, p. 30

#### ASSEMBLY SYSTEMS

Machine Trio Forms Assembly System; Jan, p. 30  
Modular Workplaces for Assembly; Feb, p. 36  
Automated Parts Storage for Assembly; Mar, p. 42  
Merry-Go-Round Riveting System; April, p. 36  
Parts Handling Systems for Bench Assembly; May, p. 50  
Power Sources for Arc Welding; June, p. 30

## Article Index

### Volume 10, January through December 1967

This index lists all feature articles and items of one-half page, or more, in length published during 1967. Article subjects are classified by functional category: Management, Fastening and Joining, Electrical/Electronic Assembly & Packaging and Assembly Systems.

#### MANAGEMENT

Assembly Design and Planning by Computer; Jan, p. 12  
Tuning Up for Profits in Manufacturing; Feb, p. 16  
Incentive Management in Action; Mar, p. 20  
Beating the Cost-Price Squeeze; April, p. 14  
Effective Assembly Training; May, p. 26  
Variable Assembly Sequencing Technique; June, p. 14

Prescription for Small Lot Headaches; July, p. 14  
Wage Incentive Orientation Through Employee Booklets; Aug, p. 14  
Clean Room Justification Guidelines; Sept, p. 14  
How to Live With Your Employees—Peacefully and Profitably; Oct, p. 22  
Producibility: A Concept for Lower Assembly Costs; Nov, p. 20  
Assembly Data Management; Part I; Dec, p. 18

## ARMSTRONG Industrial Quality WRENCH SETS



You get quality bonus when you buy ARMSTRONG Wrench Sets. This "plus value" is the Industrial Quality built into every ARMSTRONG product—the "tool sense" and know-how acquired through more than seventy years of toolmaking for industry which is applied to every product we manufacture.

#### INDUSTRIAL WRENCH SETS

ARMSTRONG Wrench Sets consist of the types and size ranges of tools required for industrial work (not for garage, homecraft or hardware store appeal)—but tools essential for assembly, maintenance or service applications. ARMSTRONG offers a broad assortment of wrench sets consisting of all types of wrenches and sockets ranging in size from those used for delicate electronic work to those needed for bridge and construction jobs. There are over 60 sets, all designed to meet various industrial requirements.

#### INDUSTRIAL QUALITY COMPONENTS

ARMSTRONG sockets, drive tools and other components are held to the highest industrial standard of quality. Sockets, accurately machined to close tolerances, slip over nuts or screw heads easily, grip firmly without sloppiness, and won't round corners. The extensive assortment of ARMSTRONG sockets and drive parts provides for the instant assembly of the proper tool for each specific job. Drive tools and supplementary wrenches are balanced to feel right and lessen fatigue when used continuously on the assembly line. Wrench openings will not spread or chew out. Sockets and drivers are handsomely finished in chrome plate as are ARMALLOY (alloy steel) wrenches. HI-TEN (carbon steel) wrenches are finished in baked-on-gray enamel with beads ground bright. Power drive sockets and accessories have rust-resistant black oxide finish.

#### INDUSTRIAL QUALITY CASES

ARMSTRONG Tool Cases and Cabinets are also of Industrial Quality. Carefully constructed of heavy gage steel, fitted to simplify tool selection—they have full length piano hinges and sturdy latches; larger cases and cabinets are equipped with substantial locks and handles. Drawers pull smoothly. All are trim in line and distinctively finished in two-tone baked enamel... with lids dark gray, bases lighter gray. Most cases provide ample space not only for the assortment carried, but for additional tools which the user may have or wish to add.

*When you order wrench sets—in metal cases, boxes or roll-packs, specify ARMSTRONG and get Industrial quality, "Fine tools that encourage good work."*

Your local ARMSTRONG Industrial Distributor offers you prompt delivery from stock on wrench sets as well as other industrial quality ARMSTRONG Tools.



**ARMSTRONG BROS. TOOL CO.**

5203 W. ARMSTRONG AVE. • CHICAGO 46, ILLINOIS

Use reader information card, circle 312

#### FASTENING & JOINING

The Turn-of-the-Nut Method; Jan, p. 16  
High-Strength Internal-Wrenching Screws; Feb, p. 22  
Special Cold-Headed Parts; Mar, p. 26  
Reader Feedback: The Turn-of-the-Nut Method; April, p. 20  
The Constant-Energy Concept; May, p. 34  
Specifying and Using Shims; June, p. 20  
The Effect of Tapered Bolts on Structural Integrity; July, p. 18  
Reader Feedback: The Turn-of-the-Nut Method; Aug, p. 18  
Anchor Nuts—Their Selection and Use; Sept, p. 20  
Cross Reference Chart for Nut Plates and Drill Jigs; Oct, p. 28  
Maintaining Tightness of Threaded Fasteners; Nov, p. 24  
Analysis of Nut and Bolt Torques; Part I; Dec, p. 22

#### ELECTRICAL/ELECTRONIC ASSEMBLY & PACKAGING

Preventing Multiple-Contact Connector Problems; Jan, p. 22  
Microcircuit Packages by the Millions; Feb, p. 32  
Streamlining Electronic Assembly Methods; Mar, p. 38  
Optimum Welds for Electronic Packaging; April, p. 30  
Flexible Flat Cable and Wiring; May, p. 40  
Computer Prepared Wiring List Drawings; June, p. 26  
Continuous Certification of Welding Operators; July, p. 28  
Reducing the Cost of Electrical Assemblies; Aug, p. 26  
Ribbon Preforming Fixtures for Cordwood Modules; Sept, p. 28  
High Density Modular Electronic Packages;  
Part I; Oct, p. 34  
Part II; Nov, p. 30  
Electrical Connectors for Appliances; Dec, p. 30

#### ASSEMBLY SYSTEMS

Machine Trio Forms Assembly System; Jan, p. 30  
Modular Workplaces for Assembly; Feb, p. 36  
Automated Parts Storage for Assembly; Mar, p. 42  
Merry-Go-Round Riveting System; April, p. 36  
Parts Handling Systems for Bench Assembly; May, p. 50  
Power Sources for Arc Welding; June, p. 30

Triple-Press Lead Making Machine; July, p. 34  
 Audiovisual Programs for Assembly; Part I; Aug, p. 36  
 Part II; Sept, p. 34  
 Stud Welding—A Versatile Assembly Technique; Oct, p. 40  
 Designing With Steel Wire Components; Nov, p. 36  
 Improving Assembly Line Efficiency; Dec, p. 36

#### ASSEMBLY SYSTEMS IDEAS

Plastics Assembly by Nailing; Feb, p. 27  
 Two Gun Tool Holder Permits One Operator to do Two Jobs; Mar, p. 44  
 Wrenching Screwdriver Speeds Manual Tightening of Screws; Mar, p. 44  
 Looped Wire Retaining Clips Provide Multiple-Size Mounting Flexibility; July, p. 36  
 Hole Aligning Fixture Holds Parts, Guides Tapping Screws; July, p. 36  
 Sorting Tray for Separating Mixed Small Parts; Sept, p. 39  
 Press Ram Fixture Designed to Insert Bushings; Sept, p. 39

#### ASSEMBLY SYSTEMS NEWS

"Dry-Liquid" Thread Locking; Feb, p. 31  
 Epoxy Adhesive Joins Oily Parts; June, p. 34

#### FASTENING & JOINING NEWS

A Simple Technique for Adjusting Spring Length and Tension; Mar, p. 35  
 Reclosable Plastic Fastener Utilizes Interlocking Stems; July, p. 23

#### FASTENING & JOINING IDEAS

Sealing With Blind Rivets; Mar, p. 36  
 New Coupling Device Without Threaded Members; Oct, p. 32

#### AUTHORS

M. D. Hoza  
 The Turn-of-the-Nut Method; Jan, p. 16  
 A. E. Ganzert  
 Preventing Multiple-Contact Connector Problems; Jan, p. 22  
 Norbert L. Enrick  
 Tuning Up for Profits in Manufacturing; Feb, p. 16  
 Francis R. Kull  
 High-Strength Internal-Wrenching Screws; Feb, p. 22  
 A. J. Huard  
 Modular Workplaces for Assembly; Feb, p. 36  
 Stanley C. Bergstrom and Louis Zanin

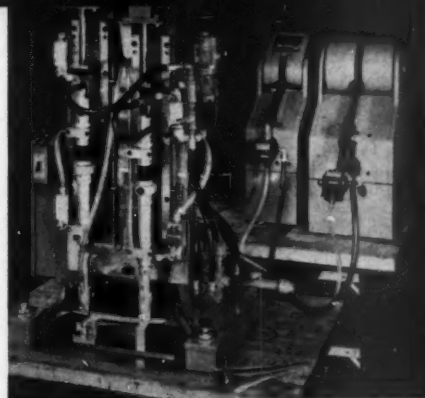
Special Cold-Headed Parts; Mar, p. 28  
 Robert W. Patraw  
 Streamlining Electronic Assembly Methods; Mar, p. 38  
 E. A. Cyrol and George McKann, Jr.  
 Beating the Cost-Price Squeeze; April, p. 14  
 Kenneth A. Plant  
 Effective Assembly Training; May, p. 26  
 Robert H. Alexander  
 The Constant-Energy Concept; May, p. 34

Robert T. Kelly  
 Optimum Welds for Electronic Packaging; April, p. 30  
 Flexible Flat Cable and Wiring; May, p. 40  
 Louis F. Fallon  
 Parts Handling Systems for Bench Assembly; May, p. 50  
 Gerald R. Frazier  
 Variable Assembly Sequencing Technique; June, p. 14  
 Michael E. Errico  
 Specifying and Using Shims; June, p. 20

## FOR HIGH SPEED FASTENER DRIVING

...on rotary tables or transfer machines

The Tru-Tork system separates driving head from hopper—up to 20'. Enables clutter-free design, keeps work areas free for loading. Flexible tube, impulse air delivery of screws lets you mount driving spindles to get at locations hard to reach with fixed chutes. One multiple hopper can supply many heads.



...on your final assembly lines

Cut fastener insertion time and costs up to 60% in sheet metal assembly and wood-joining. Drive screws up to 2" long with Tru-Tork hand gun. For high production, can be supported by free-swinging table mount or by spring-loaded overhead mount, with hopper located well away from the work area.



Send for our latest brochure



### CLYDE CORPORATION

1800 W. MAPLE ROAD

TROY, MICHIGAN 48064

Use reader information card, circle 313





The biggest  
production time  
saver in the  
history of  
thread sealing

## John Crane Thred-Taper MACHINE

Now you can automate your thread sealing and eliminate the cost of time consuming labor involved in manual methods. The remarkable Thred-Taper Machine wraps threaded connections at a rate in excess of 1000 per hour. All types of metal or plastic male threaded nipples and fittings can be handled. These include all lengths of pipe, hose connections, accessories such as dial thermometers and gauges, plus bolts, studs and plugs up to 1" diameter.

Manufacturers of assembled products can centralize and do their sealing on a production line basis, either at the assembly area or at a remote location. Fitting manufacturers can have the competitive advantage of offering pre-sealed threads.

Request Bulletin PLS-570 and manual for full details on the above and the other substantial advantages provided by the Thred-Taper, both from the standpoint of production and sealing reliability. Also ask for information on how the machine can be best programmed into your particular operation, either by purchase, lease or through your distributor.

Thred-Taper is a Crane Packing Company trademark



### CRANE PACKING COMPANY

6416 OAKTON STREET, MORTON GROVE, ILLINOIS 60053

PLANTS IN:

Canada, Mexico, Brazil, England and Australia

SHAFT SEALS • PACKINGS • TFE PRODUCTS • SEALERS



Just Insert



Hold



It's All Automatic

#### Article Index: Cont.

- W. M. Shakespeare  
Computer Prepared Wiring Test Drawings; June, p. 26
- Danilo C. Martinez  
Power Sources for Arc Welding; June, p. 30
- Hans J. Goldman  
Prescription for Small Lot Headaches; July, p. 14
- Clarence R. Smith  
The Effect of Tapered Bolts on Structural Integrity; July, p. 18
- Frank Parker  
Continuous Certification of Welding Operators; July, p. 28
- F. J. Lambert and W. C. Cooling  
Wage Incentive Orientation Through Employee Booklets; Aug, p. 14
- Roger Hansen  
Reader Feedback: The Turn-of-the-Nut Method; Aug, p. 18
- Warren A. Sommers  
Reducing the Cost of Electrical Assemblies; Aug, p. 28
- David C. Briant and Joanne M. Thyken  
Audiovisual Programs for Assembly; Part I; Aug, p. 36  
Audiovisual Programs for Assembly; Part II; Sept, p. 34
- William A. Hume  
Clean Room Justification Guidelines; Sept, p. 14
- Frederick D. Fernsler  
Anchor Nuts: Their Selection and Use; Sept, p. 20
- Edward A. Winkowski  
Ribbon Preforming Fixtures for Cordwood Modules; Sept, p. 28
- A. A. Imberman  
How to Live With Your Employees—Peacefully and Profitably; Oct, p. 22
- D. L. Lester  
Cross-Reference Chart for Nut Plates and Drill Jigs; Oct, p. 28
- Ralph N. Jackson  
High Density Modular Electronic Packages; Part I; Oct, p. 34  
Part II; Nov, p. 30
- Charles Faroni  
Maintaining Tightness of Threaded Fasteners; Nov, p. 24
- Frank E. Chepko  
Designing With Steel Wire Components; Nov, p. 36
- Richard B. Scott and Jerome Lobel  
Assembly Data Management; Part I; Dec, p. 18
- James E. Foisy  
Analysis of Nut and Bolt Torques; Part I; Dec, p. 22
- Sidney V. Worth  
Electrical Connectors for Appliances; Dec, p. 30
- Thomas McLeod  
Improving Assembly Line Efficiency; Dec, p. 36

